

SBD
A1

WHAT IS CLAIMED IS:

1. A system for tracking service personnel, comprising:
 - a portable wireless device;
 - location identification means for acquiring location data of the portable wireless device;
 - a processor at a wireless service provider for converting positions based on the location data to corresponding street addresses using a database for converting coordinate pairs to street addresses;
 - means for generating a service person track report based on the corresponding street addresses;

10 thereby enabling the service person track report to be generated by the wireless service provider and transmitted to a subscriber in order to track a service person.
2. The system of claim 1, wherein the location identification means acquires location data based on the detection of a specific phone number associated with tracking service personnel.
3. The system of claim 2, wherein the location identification means further acquires location data based on the detection of an emergency phone number.
4. The system of claim 3, wherein the detection is performed by a mobile telephone switching office.
- 20 5. The system of claim 4, wherein the location identification means forwards the location data to a first device if the specific phone number is detected and forwards the location data to a second device if the emergency phone number is detected.

6. The system of claim 5, wherein the first device is the processor and the second device is one of a public service answering point, an emergency services router, and a database coupled to a public service answering point.

7. The system of claim 1, wherein the location data is based on a wireless network-based time difference of arrival (TDOA) computation.

8. The system of claim 1, wherein the location data is based on a wireless network-based angle of arrival (AOA) computation.

9. The system of claim 1, wherein the location data is based on a combination of wireless network-based time difference of arrival (TDOA) and angle of arrival (AOA) computations.

10. The system of claim 1, wherein the location data is based on a location pattern matching (LPM) computation.

11. The system of claim 1, wherein the location data is based on a global positioning system (GPS) computation.

15 12. The system of claim 11, wherein the portable wireless device includes a GPS receiver.

13. A system for tracking service personnel, comprising:
a portable wireless device;
location identification means for acquiring location data of the portable wireless device;

20 a processor at a wireless service provider for converting positions based on the location data to corresponding street addresses using a database, the database comprising a geographic information system (GIS);

means for generating a service person track report based on the corresponding street addresses;

thereby enabling the service person track report to be generated by the wireless service provider and transmitted to a subscriber in order to track a service person.

5 14. The system of claim 13, wherein the location identification means acquires location data according to a periodic time interval.

15. The system of claim 13, wherein the service person track report is used by the subscriber to prepare a bill.

10 16. The system of claim 13, wherein the service person track report is used by the subscriber to gather efficiency statistics on the service person or on a group of service persons.

17. The system of claim 13, wherein the service person track report includes information indicating a duration of time the portable wireless device was at a specific street address.

15 18. A system for tracking service personnel, comprising:
a portable wireless device;

location identification means for acquiring location data of the portable wireless device;

20 a processor at a wireless service provider for converting positions based on the location data to corresponding street addresses using a database for converting coordinate pairs to street addresses, and for comparing the positions to a schedule of predetermined sites in order to confirm whether a site visit was made;

means for generating a service person track report based on at least the corresponding street addresses;

thereby enabling the service person track report to be generated by a wireless carrier and transmitted to a subscriber in order to track a service person.

5 19. The system of claim 18, wherein the schedule is generated by accessing the database in order to convert street addresses corresponding to the predetermined sites to coordinate pairs corresponding to the predetermined sites.

20. The system of claim 18, wherein the coordinate pairs comprise X-Y coordinate pairs or longitude-latitude coordinate pairs.

10 21. The system of claim 18, wherein the service person track report includes information indicating whether a site visit was made to each of the predetermined sites.

22. The system of claim 18, wherein the location identification means acquires location data based on the detection of detection of a specific phone number associated with tracking service personnel or the detection of an emergency phone number.

15 23. The system of claim 22, wherein the location identification means forwards the location data to a first device if the specific phone number is detected and forwards the location data to a second device if the emergency phone number is detected.

24. The system of claim 23, wherein the first device is the processor and the second device is one of a public service answering point, an emergency services router, and a 20 database coupled to a public service answering point.

25. The system of claim 18, wherein the location data is based on a wireless network-based time difference of arrival (TDOA) computation.

26. The system of claim 18, wherein the location data is based on a wireless network-

based angle of arrival (AOA) computation.

27. The system of claim 18, wherein the location data is based on a combination of wireless network-based time difference of arrival (TDOA) and angle of arrival (AOA) computations.

5 28. The system of claim 18, wherein the location data is based on a location pattern matching (LPM) computation.

29. The system of claim 18, wherein the location data is based on a global positioning system (GPS) computation.

30. A method for tracking service personnel, comprising:

10 providing a portable wireless device to a service person;

acquiring location data of the portable wireless device;

converting positions based on the location data to corresponding street addresses using a database for converting coordinate pairs to street addresses; and

generating a service person track report based on the corresponding street

15 addresses.

31. The method of claim 30, further comprising the step of detecting one of a specific phone number associated with service person tracking and an emergency phone number.

32. The method of claim 31, further comprising the step of sending the location data to a first device when the specific phone number is detected and sending the location data to a 20 second device when the emergency phone number is detected.

33. The method of claim 32, wherein the first device is a processor for performing the step of converting and the second device is one of a public service answering point, an emergency services router, and a database coupled to a public service answering point.

34. The method of claim 30, wherein the location data is based on a wireless network-based time difference of arrival (TDOA) computation.

35. The method of claim 30, wherein the location data is based on a wireless network-based time angle of arrival (AOA) computation.

5 36. The method of claim 30, wherein the location data is based on a combination of wireless network-based time difference of arrival (TDOA) and angle of arrival (AOA) computations.

37. The method of claim 30, wherein the location data is based on a wireless network-based time location pattern matching (LPM) computation.

10 38. The method of claim 30, wherein the location data is based on a global positioning system (GPS) computation.

39. The method of claim 38, wherein the portable wireless device includes a GPS receiver.

40. A method for tracking service personnel, comprising:

15 providing a portable wireless device to a service person;

acquiring location data of the portable wireless device;

converting positions based on the location data to corresponding street addresses using a database, the positions comprising X-Y pairs or latitude-longitude pairs, and the database comprising a geographic information system (GIS); and

20 generating a service person track report based on the corresponding street addresses.

41. The method of claim 40, wherein the step of acquiring corresponds to a periodic time interval.

42. The method of claim 40, further comprising the step of transmitting the service person track report from a wireless carrier to a subscriber.

43. The method of claim 40, further comprising the step of preparing a bill based on the service person track report.

5 44. The method of claim 40, further comprising the step of gathering efficiency statistics on the service person or a group of service persons based on the service person track report.

45. The method of claim 40, further comprising the step of comparing the positions to a schedule of predetermined sites in order to confirm whether a site visit was made.

10 46. The method of claim 45, wherein the schedule of predetermined sites is generated by accessing the database in order to convert street addresses corresponding to the predetermined sites to coordinate pairs corresponding to the predetermined sites.

47. The method of claim 45, wherein the step of comparing is based on a threshold.

48. The method of claim 47, wherein the threshold is based on a distance.

15 49. The method of claim 47, wherein the threshold is based on a distance and a time interval.

50. The method of claim 45, wherein the service person track report includes information describing whether a site visit was made to each of the predetermined sites.

51. The method of claim 40, wherein the service person track report includes

20 information indicating a duration of time the portable wireless device was at one of the corresponding street addresses.

52. A system for tracking personnel, comprising
means for providing two-way communications;

means for acquiring location data of the means for providing two-way communications;

means for converting the location data into corresponding street addresses;

means for comparing the location data to a schedule of predetermined sites in order

5 to determine whether a site visit was made; and

means for generating a service track report to be sent by a wireless carrier to a subscriber.

20 53. The system of claim 52, wherein the means for providing two-way communications comprises a cell phone, a two-way pager, or a personal data assistant.

10 54. The system of claim 52, wherein the means for acquiring location data is a processor that performs one or more of a global positioning system (GPS) computation, a time difference of arrival (TDOA) computation, an angle of arrival (AOA) computation, and a location pattern matching (LPM) computation.

15 55. The system of claim 52, wherein the means for acquiring location data acquires location data based on the detection of a specific phone number associated with tracking service personnel or based on the detection of an emergency phone number.

20 56. The system of claim 55, wherein the means for acquiring location data forwards the location data to a first device if the specific phone number is detected, and wherein the means for acquiring location data forwards the location data to a second device if the emergency phone number is detected.

57. The system of claim 56, wherein the means for converting and the means for comparing comprise a processor at the wireless carrier, and wherein said first device comprises said processor.

58. The system of claim 52, wherein the service track report includes information of the service person track as a function of time and information describing whether a site visit was made.